

CLAIMS

[1] A communication device for communicating via a network to provide a service to another communication device on the network,
5 said device comprising:

a main processing unit operable to process a main service to be provided to the other communication device;

a communication processing unit operable to transmit and receive request information and response information
10 corresponding to the request information with the other communication device via the network; and

a power supply unit operable to stop supplying power to said main processing unit in a state of being able to supply the power again and to supply the power to said communication processing
15 unit,

wherein said communication processing unit comprises:

a response possibility determining unit operable to determine whether or not said communication processing unit is individually able to respond to the request information received from the other
20 communication device;

a response unit operable to create the response information and to transmit the response information to the other communication device, when the determination indicates that the response is possible; and

25 a power supply controlling unit operable to start the main processing unit, to control said power supply unit, and to supply the power to said main processing unit, when the determination indicates that the response is not possible.

30 [2] The communication device according to claim 1,
wherein said response unit is operable to pass over the received request information to said main processing unit when the

determination indicates that the response is not possible, and
said main processing unit is operable to perform the
processing of responding to the request information that has been
passed over.

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[3] The communication device according to claim 2,
wherein, when said main processing unit completes the
processing of responding to the request information that has been
passed over, said main processing unit is operable to control said
10 power supply unit to stop supplying the power to said main
processing unit.

[4] The communication device according to claim 1,
wherein said response possibility determining unit is operable
15 to determine that the response is not possible when the received
request information is:

(1) a control request which requires control for another
communication device to receive the service provided by said
communication device; or

20 (2) a status inquiry request which inquires about a status of a
service of said communication device.

[5] The communication device according to claim 1,
wherein said power supply controlling unit is operable to
25 control said power supply unit to stop supplying the power to said
main processing unit when the request information determined not
to be possible to respond is not received for a predetermined period.

[6] The communication device according to claim 1, wherein said
30 communication processing unit further comprises
an address management unit operable to store information
indicating an address of said communication device and a term of

validity of the address, and, when a period until expiration of said term of validity turns into predetermined time, to start said main processing unit via said power supply controlling unit to supply the power to said main processing unit, and to cause said main processing unit to execute an update processing of the address.

[7] The communication device according to claim 1,
wherein said power supply unit is configured as one power supply unit including a main-power supply unit operable to supply the power to said main processing unit and a communication power supply unit operable to supply the power to said communication unit, and

said power supply control unit is operable to control the power supply to said main processing unit in accordance with a direction from said communication processing unit or said main processing unit.

[8] The communication device according to claim 1, wherein said power supply unit includes:

a main-power supply unit operable to supply the power to the main processing unit; and

a communication power supply unit operable to supply the power to said communication processing unit,

wherein said power supply controlling unit is operable to control the power supply to said main processing unit by controlling said main-power supply unit in accordance with a direction from said communication processing unit or said main processing unit.

[9] The communication device according to claim 1,
wherein said response possibility determining unit is operable to determine the possibility of response by said communication processing unit based on a port number or URL included in the

received request information.

[10] The communication device according to claim 1,
wherein said response possibility determining unit is operable
5 to determine that the response is possible when the received
request information is:

(1) a discovery request inquiring with the other
communication devices whether the communication device is
present,

10 (2) an acquisition request of description information,
indicating at least one of a type, a name, an ID, and the provided
service of said communication device; or

(3) both (1) and (2).

15 [11] The communication device according to claim 1, wherein said
communication processing unit further includes

an alive packet transmitting unit which connects to the
network every predetermined time, indicating that said
communication device is in a state where the service can be
20 provided, and transmits an alive packet including at least address
information of said communication device.

[12] The communication device according to claim 1, wherein said
communication processing unit further includes

25 an address management unit operable to store information
indicating an address of said communication device and a term of
validity of the address, and, when the period until expiration of the
term of validity has reached a predetermined time, performs update
processing on the address.

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[13] A communication method of communicating via a network to
provide a service to another communication device on the network,

comprising:

a main processing step of processing a main service provided to the other communication device;

5 a communication processing step of transmitting and receiving request information and response information corresponding to the request information with the other communication device via the network; and

10 a power supply step of stopping supplying power for performing said main processing step in a state of being able to supply the power again, and supplying the power for performing said communication processing step,

wherein said communication processing step includes:

15 a response possibility determination step of determining whether or not it is possible, in said communication processing step, to respond to the request information received from the other communication device;

a response step of creating the response information and transmitting to the other communication device, when the determination indicates that the response is possible; and

20 a power supply control step of starting said main processing step, controlling said power supply step, and supplying the power to said main processing step, when the determination indicates that the response is not possible.

25 [14] A semiconductor device into which a communication device is integrated as a chip, the communication device being for communicating via a network to provide a service for other communication devices on the network, said device comprising:

30 a main processing unit operable to process a main service provided to the other communication device;

a communication processing unit operable to transmit and receive request information and response information

corresponding to the response information with the other communication device via the network; and

a power supply unit operable to stop supplying power to said main processing unit in a state of being able to supply the power again, and to supply the power to said communication processing unit,

wherein said communication processing unit includes:

a response possibility determining unit operable to determine whether or not said communication processing unit is individually able to respond to the request information received from the other communication device;

a response unit operable to create the response information and transmit to the other communication device, when the determination indicates that the response is possible; and

a power supply controlling unit operable to start said main processing unit, control said power supply unit, and supply the power to said main processing unit, when the determination indicates that the response is not possible.